REMARKS/ARGUMENTS

The following remarks are responsive to the points raised by the Office Action dated July 27, 2007. In view of the following remarks, reconsideration is respectfully requested.

Pending Claims

Claims 1-28 are pending.

The Office Action

Claims 1-13, 20, 22, and 24-28 were rejected under 35 U.S.C. § 103 as unpatentable over U.S. Patent No. 5,352,507 to Bresson et al. (hereinafter, "Bresson") in view of U.S. Patent No. 6,703,095 to Busshoff et al. (hereinafter, "Busshoff") and U.S. Patent No. 5,347,927 to Berna et al. (hereinafter, "Berna").

Claims 14-19 were rejected under § 103 as unpatentable over Bresson in view of Busshoff and Berna as applied to claims 1 and 2, and further in view of U.S. Patent No. 5,754,931 to Castelli et al. (hereinafter, "Castelli").

Claim 21 was rejected under § 103 as unpatentable over Bresson in view of Busshoff and Berna as applied to claims 1 and 2 above, and further in view of U.S. Patent No. 6,699,419 to Kia et al. (hereinafter, "Kia").

Claim 23 was rejected under § 103 as unpatentable over Bresson in view of Busshoff and Berna as applied to claims 1 and 2 above, and further in view of U.S. Patent Publication No. 2002/0182328 to Asai et al. (hereinafter, "Asai").

Each of these rejections is separately and respectfully traversed.

Enclosed is a declaration under 37 C.F.R. § 1.132 signed by one of the inventors of the subject application, Dr. Gérard Rich, in support of the patentability of these claims over Bresson, Berna, and Busshoff. Dr. Rich is also one of the named inventors of Berna and Bresson, and also has 25 years of experience in the field of printing sleeves. Therefore, Dr. Rich is in an especially suitable position to elucidate and compare the structural differences between the sleeves of Bresson, Berna, and Busshoff versus that of the present claims. As

attested to by Dr. Rich, Bresson, Busshoff, and Berna do not meet all of the limitations of the independent claims. Therefore, Bresson, Busshoff, and Berna do not render the claims obvious, either alone or in combination.

A. Busshoff

Independent claim 1 of the application defines a printing sleeve comprising, *inter alia*, a stiffening layer capable of undergoing a deviation of 100 to 500 microns without fracture. According to the Office Action, base sleeve 12 of Busshoff is a reinforced layer having a thickness between about 0.1 to 0.8 mm. As attested to by Dr. Rich, however, base sleeve 12 of Busshoff is not capable of undergoing a deviation of 100 to 500 microns without fracture, as claimed (decl. ¶ 5). Busshoff teaches that the base sleeve 12 is fabricated from a polymer resin reinforced with a fibrous material. The fibrous material may contain glass fibers, aramid fibers, carbon fibers, metal fibers, ceramic fibers, or any other synthetic endless or long fibers that increases the stability, stiffness, and rigidity of sleeve 10 so that it may accommodate conditions found in conventional graphic arts environments (Busshoff, col. 5, line 61 to col. 6, line 7).

As explained by Dr. Rich, the base sleeve 12 of Busshoff is a structural composite with a hard matrix (decl. ¶ 6). Accordingly, as Dr. Rich attests, the base layer 12 of Busshoff is designed to replace a steel carrier and is not designed for withstanding flexural deflection (decl. ¶ 6). As Dr. Rich explains, the printing process regularly overloads the sleeve due to defects in the paper and splices of paper rolls, which increases the pressure applied to the sleeve and more than doubles the deflections applied to the sleeve (decl. ¶ 6). The base layer 12 of Busshoff cannot withstand a deviation of 100 to 500 microns because the rigid matrix will crack under repeated loadings, as Dr. Rich attests (decl. ¶ 6). Thus, the base layer 12 of Busshoff cannot meet the claim limitation of being capable of undergoing a deviation of 100 to 500 microns without fracture. Therefore, Busshoff cannot render the present claims obvious.

B. Bresson

The Office Action characterizes elastomer layer 5 of Bresson as a circumferential stiffening layer. However, layer 5 of Bresson cannot be characterized as the claimed

stiffening layer. Layer 5 of Bresson is an elastomer layer optionally reinforced by fibers (col. 5, lines 40-42). Bresson further teaches that the thickness of the elastomeric layer 5 is 1 mm (col. 8, lines 14-15).

As explained by Dr. Rich, in order to for the elastomeric layer 5 of Bresson to be an adequate stiffening layer, as claimed, it would be necessary to dramatically harden the elastomer of layer 5 of Bresson or to increase the thickness of the layer 5 (decl. ¶ 8). Dr. Rich further attests that dramatically hardening the elastomer layer 5 of Bresson or increasing the thickness of the layer 5 would cause the layer 5 to become brittle and susceptible to cracking under deflection (decl. ¶ 8). Moreover, Dr. Rich explains that increasing the thickness is not practical when the space available for the printing sleeve is quite limited (decl. ¶ 8). Thus, layer 5 of Bresson cannot be characterized as the stiffening layer claimed in independent claims 1 and 28. Therefore, Bresson cannot render the present claims obvious.

Furthermore, the claimed printing sleeve preferably has a Young's modulus in the circumferential direction of 1000-2000 MPa (specification, page 4, lines 11-13). Bresson, on the other hand, teaches that the Young's modulus in the circumferential direction of the elastomeric layer 5 is at least 100 MPa and is preferably equal to 200 MPa (col. 6, lines 2-6). As explained by Dr. Rich, this low Young's modulus that is taught in Bresson will not provide the same capabilities and functionalities as the stiffening layer claimed in independent claims 1 and 28 (decl. ¶ 9). Therefore, Bresson does not teach the claimed stiffening layer, and Bresson cannot render the present claims obvious.

C. Berna

According to the Office Action, Berna teaches a similar multilayered printing sleeve having a spirally-integrated reinforced layer 14 that has a tensile modulus in the circumferential direction of 50-2000 MPa and a modulus of compression in the radial direction of 5 to 50 MPa. Layer 14 of Berna, however, is not comparable to the claimed stiffening layer.

Layer 14 of Berna is spirally wrapped around the cylinder with at least two warps (col. 3, lines 51-52; Figure 3). As attested to by Dr. Rich, the outer part of the layer 14 of Berna undergoes complex deformation when deflected, however, the inner part that is sitting

on the carrier or the cylinder is not deflected (decl. ¶ 10). Thus, layer 14 of Berna cannot be characterized as the claimed stiffening layer. Moreover, as explained by Dr. Rich, the printing element described in Berna provides a very different approach to the problem of offset printing sleeves (decl. ¶ 10). Because the printing element described in Berna provides a very different approach to the problem of offset printing sleeves, one of ordinary skill in the art would not combine Berna with Bresson or Busshoff to obtain the printing sleeve claimed in independent claims 1 and 28. Accordingly, Berna cannot render the present claims obvious.

Since the independent claims are allowable for the reasons set forth above, the dependent claims are also allowable because they depend from allowable independent claims.

Conclusion

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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